

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of preparing a targeting composition having tumour-targeting capacity, comprising covalently attaching the cyclic GRENYHGCTTHWGFTLC peptide (CTT2 peptide) (SEQ ID NO: 1) or a derivative thereof to a synthetic derivative of polyethylene glycol.
2. (Original) The method according to claim 1, wherein the synthetic derivative of polyethylene glycol is DSPE-PEG.
3. (Original) The method according to claim 2, wherein the DSPE-PEG is DSPE-PEG-NHS.
4. (Currently Amended) The method according to claim 1, wherein the derivative of the CTT2 peptide is a peptide selected from the group consisting of KRENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA)RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA(In))RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K-NH₂ (SEQ ID NO: 3), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K(DOTA)-NH₂ (SEQ ID NO: 3), GRENYHG-Cyclo(CTTH(*d,l*-6-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4), GRENYHG-Cyclo(CTTH(*d,l*-5-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4) and GRENYHG-Cyclo-(CTTH(*d,l*-5-OH-W)GFTLC)-NH₂ (SEQ ID NO: 4).
5. (Original) The method according to claim 4, wherein the synthetic derivative of polyethylene glycol is DSPE-PEG-NHS.
6. (Currently Amended) A method for preparing a therapeutic or imaging liposome composition, comprising the steps of
 - (a) obtaining liposomes carrying at least one chemotherapeutic agent or an imaging agent,
 - (b) preparing a targeting composition having tumour-targeting capacity, by covalently attaching the cyclic GRENYHGCTTHWGFTLC peptide (CTT2 peptide) (SEQ ID NO: 1) or a derivative thereof to a synthetic derivative of polyethylene glycol, and

(c) combining the liposomes and the targeting composition to form a suspension.

7. (Currently Amended) The method according to claim 6, wherein the derivative of the CTT2 peptide is a peptide selected from the group consisting of KRENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA)RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA(In))RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K-NH₂ (SEQ ID NO: 3), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K(DOTA)-NH₂ (SEQ ID NO: 3), GRENYHG-Cyclo(CTTH(*d,l*-6-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4), GRENYHG-Cyclo(CTTH(*d,l*-5-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4) and GRENYHG-Cyclo-(CTTH(*d,l*-5-OH-W)GFTLC)-NH₂ (SEQ ID NO: 4).

8. (Currently Amended) A method for treating cancer in a patient, comprising the steps of

(a) obtaining liposomes carrying at least one chemotherapeutic agent,

(b) obtaining a targeting composition comprising

(1) the cyclic GRENYHGCTTHWGFTLC peptide (CTT2 peptide) (SEQ ID NO: 1) or a derivative thereof and

(2) a synthetic derivative of polyethylene glycol,

(c) combining the liposomes and the targeting composition to form a suspension, and

(d) administering the suspension obtained to the patient.

9. (Currently Amended) The method according to claim 8, wherein the derivative of CTT2 peptide is a peptide selected from the group consisting of KRENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA)RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA(In))RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K-NH₂ (SEQ ID NO: 3), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K(DOTA)-NH₂ (SEQ ID NO: 3), GRENYHG-Cyclo(CTTH(*d,l*-6-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4), GRENYHG-Cyclo(CTTH(*d,l*-5-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4) and GRENYHG-Cyclo-(CTTH(*d,l*-5-OH-W)GFTLC)-NH₂ (SEQ ID NO: 4).

10. (Original) The method according to any one of claims 6 to 9, wherein the chemotherapeutic agent is doxorubicin.

11. (Currently Amended) A diagnostic or imaging test kit for carrying out a diagnostic method for detecting a suspected tumour in a patient, wherein the test kit comprises

- a targeting composition comprising the cyclic GRENYHGCTTHWGFTLC peptide (CTT2 peptide) (SEQ ID NO: 1) or a derivative thereof and a synthetic derivative of polyethylene glycol, and
- liposomes carrying at least one imaging agent.

12. (Currently Amended) The test kit according to claim 11, wherein the derivative of CTT2 peptide is a peptide selected from the group consisting of KRENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA)RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA(In))RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K-NH₂ (SEQ ID NO: 3), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K(DOTA)-NH₂ (SEQ ID NO: 3), GRENYHG-Cyclo(CTTH(*d,l*-6-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4), GRENYHG-Cyclo(CTTH(*d,l*-5-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4) and GRENYHG-Cyclo-(CTTH(*d,l*-5-OH-W)GFTLC)-NH₂ (SEQ ID NO: 4).

13. (Currently Amended) A diagnostic or imaging composition, comprising

- a targeting composition comprising the cyclic GRENYHGCTTHWGFTLC peptide (CTT2 peptide) (SEQ ID NO: 1) or a derivative thereof and a synthetic derivative of polyethylene glycol, and
- liposomes carrying at least one imaging agent.

14. (Currently Amended) The composition according to claim 13, wherein the derivative of CTT2 peptide is a peptide selected from the group consisting of KRENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA)RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA(In))RENYHG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K-NH₂ (SEQ ID NO: 3), Ac-GRENYHG-cyclo-(CTTHWGFTLC)K(DOTA)-NH₂ (SEQ ID NO: 3), GRENYHG-Cyclo(CTTH(*d,l*-6-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4),

GRENHYG-Cyclo(CTTH(*d,l*-5-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4) and GRENHYG-Cyclo(CTTH(*d,l*-5-OH-W)GFTLC)-NH₂ (SEQ ID NO: 4).

15. (Currently Amended) Use of a preparation comprising as a suspension

(1) a targeting composition, which comprises

(a) the cyclic GRENHYGCTTHWGFTLC peptide (CTT2 peptide) (SEQ ID NO: 1) or a derivative thereof and covalently attached thereto

(b) a synthetic derivative of polyethylene glycol, and

(2) liposomes carrying at least one chemotherapeutic agent,

for the manufacture of a pharmaceutical composition useful for the treatment of cancer.

16. (Currently Amended) Use according to claim 15, wherein the derivative of CTT2 peptide is a peptide selected from the group consisting of KRENHYG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA)RENHYG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA(In))RENHYG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), Ac-GRENHYG-cyclo-(CTTHWGFTLC)K-NH₂ (SEQ ID NO: 3), Ac-GRENHYG-cyclo-(CTTHWGFTLC)K(DOTA)-NH₂ (SEQ ID NO: 3), GRENHYG-Cyclo(CTTH(*d,l*-6-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4), GRENHYG-Cyclo(CTTH(*d,l*-5-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4) and GRENHYG-Cyclo-(CTTH(*d,l*-5-OH-W)GFTLC)-NH₂ (SEQ ID NO: 4).

17. (Currently Amended) A peptide selected from the group consisting of KRENHYG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA)RENHYG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), K(DOTA(In))RENHYG-cyclo-(CTTHWGFTLC) (SEQ ID NO: 2), Ac-GRENHYG-cyclo-(CTTHWGFTLC)K-NH₂ (SEQ ID NO: 3), Ac-GRENHYG-cyclo-(CTTHWGFTLC)K(DOTA)-NH₂ (SEQ ID NO: 3), GRENHYG-Cyclo(CTTH(*d,l*-6-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4), GRENHYG-Cyclo(CTTH(*d,l*-5-Fluoro-W)GFTLC)-NH₂ (SEQ ID NO: 4) and GRENHYG-Cyclo-(CTTH(*d,l*-5-OH-W)GFTLC)-NH₂ (SEQ ID NO: 4).

18. (Currently Amended) A process for purifying the targeting composition obtainable by covalently attaching the cyclic GRENHYGCTTHWGFTLC peptide (CTT2 peptide) (SEQ ID NO: 1) or a

derivative thereof to a synthetic derivative of polyethylene glycol, the process comprising the steps of

- (a) treating the reaction mixture with an organic solvent to obtain a precipitate,
- (b) centrifuging, washing with an organic solvent and recentrifuging the precipitate to obtain a pellet,
- (c) suspending the pellet in a buffer and
- (d) carrying out size-exclusion chromatography to obtain pure targeting composition.

19. (Original) The process according to claim 18, wherein the organic solvent in steps (a) and (b) is diethyl ether and the buffer in step (c) is ammonium acetate - TFA buffer, pH 4.5.